AMENDMENTS TO THE CLAIMS

This listing will replace all prior versions, and listings, of claims in the application:

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Listing of Claims:

1.- 79.   (cancelled).

10   80.   (previously presented) A method for regulating a milking process, said method comprising the steps of

i)   identifying at least one volume of milk,

15   ii)   assessing particles in the identified volume by either

a)   counting of substantially individual somatic cells in the volume of milk, or

b)   assessing at least one property of at least one biological particle in

20   the volume of milk,

iii)   obtaining at least one result of the assessment of particles in the identified volume of milk,

iv)   providing at least one predetermined milk quality parameter,

v)   correlating the at least one result obtained in step iii) with the predetermined milk quality parameter provided in step iv),

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vi)   transferring any one or both of

c) the at least one result obtained in iii), and

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d) the correlation obtained in v)

to regulating means capable of regulating the milking process of at least a portion of the milk being milked, and

15   vii)   regulating the milking process based on any one or both of c) the at least one result obtained in iii), and d) the correlation obtained in v).

81.   (previously amended) A method according to claim 80, said method further comprising assessing one or more chemical or physical property of the
20   milk.

82.   (previously amended) A method according to claim 80, wherein the assessment of particles is the counting of biological particles present in the milk, the biological particles having diameter of more than 0.1 mm.

83.   (previously amended) A method according to claim 80, wherein the biological particles are selected from the group consisting of: particles containing protein, particles containing somatic cells, and particles containing body tissue.

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84.   (previously presented) A method according to claim 80, wherein the assessment of particles is the counting of blood particles.

85.   (previously amended) A method according to claim 81, wherein the

10   assessment of one or more chemical properties comprises the estimation of the concentration and/or the level of one or more of: fat, protein, lactose, citric acid, urea, haemoglobin, ketones, carbon dioxide, oxygen, pH, potassium, calcium or sodium.

15   86.   (previously amended) A method according to claim 81, wherein the assessment of one or more physical properties comprises the measurement of one or more of: temperature, conductivity, or light scatter.

87.   (previously presented) A method according to claim 80, wherein the

20   counting of the number of individual somatic cells and/or the assessment of one or more particles is done for one or more individual quarter(s).

88. (previously presented) A method according to claim 81, wherein the assessment of one or more chemical properties and/or the assessment of one or more physical property is done for one or more individual quarter(s).

5   89. (previously presented) A method according to claim 80, wherein the regulation of the handling of the milk is done individually for milk from one or more quarter(s).

90. (previously presented) A method according to claim 80, wherein the

10   assessment of particles in the milk is done before or after identification of the individual animal being milked.

91. (previously presented) A method according to claim 80, wherein the regulation of the handling of the milk is directing the milk to one or more storage

15   means and/or outlets.

92. (previously presented) A method according to claim 80, wherein at least one of the result of the assessment of the volume of milk is/are transferred to a storage means, the data of the storage means being available to computing

20   means.

93. (previously presented) A method according to claim 80, wherein the assessment of particles is performed by automated microscopy performed by creating a spatial image representation of electromagnetic irradiation from an

exposing domain containing a sample of the milk and performing a quantitated detection of the image.

94.   (previously presented) A method according to claim 93, wherein the volume of the liquid sample from which electromagnetic radiation is irradiated is detected is in the range between 0.01 μl and 20 μl.

95.   (previously presented) A method according to claim 93, wherein the signal which is detected for the assessment of particle is a signal which is caused by attenuation of electromagnetic signal, the attenuation being associated to one or more molecules which is/are a part of the particle.

96.   (previously presented) A method according to claim 95, wherein the signal which is detected for the assessment of particles originates from one or several types of molecules comprising one of the following: a) molecules which bind to the particles; b) are retained within the particles; or c) interact with the particles, such molecules being added to the sample before or during exposure of electromagnetic signals, the molecules being molecules giving rise to one or several of the following phenomena selected from the group consisting of: attenuation of electromagnetic radiation, photoluminescence when illuminated with electromagnetic radiation, scatter of electromagnetic radiation, or raman scatter.

97.   (previously presented) A method according to claim 96, wherein an effective amount of one or more nucleic acid dyes and/or one or more potentiometric membrane dyes is added.

5   98.   (currently amended) A method according to claim 97, wherein there is/are added one or more nucleic acid dyes selected from the group consisting of: acridine dyes cyanine dyes indoles and imidazoles.

99.   (previously presented) A method according to claim 96, wherein any

10   chemical added has the effect of aiding in the binding of one or more dyes to a particle.

100.   (previously presented) A method according to claim 96, wherein any chemical added has the effect of increasing the rate of dissolution or

15   solubilisation of any chemical on solid non-aqueous or freeze dried form.

101.   (previously presented) A method according to claim 81, wherein the assessment of any chemical property is based on spectrophotometric measurement and/or potentiometric measurement.

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102.   (previously presented) A method according to claim 80, wherein the volume of milk being assessed is a sample of milk which is undiluted, except for the addition of the reagents used in the assessment.

103.   (previously presented) A method according to claim 80, wherein at least a part of the volume of milk being assessed is acquired and/or identified at the beginning of milking.

5   104.   (previously presented) A method according to claim 80, wherein the assessment of particles-is performed in a disposable device.

105.   (currently amended) A method according to claim 80, wherein ~~of~~ the assessment of particles is performed in a domain where at least one physical

10   dimension of the domain partly determines the volume of the domain, and where the at least one physical dimension is different during at least a part of any period when a sample is introduced to the domain and at least a part of any period when a measurement or detection is performed.

15   106.   (previously presented) A method according to claim 80, wherein the assessment of particles is activated or controlled by the controlling means controlling the milking.

107.   (previously presented) A system for regulating a milking process, said

20   system comprising:

i)   detecting means for identifying at least one volume of milk;

ii)   means for assessing particles in the identified volume by either

a) counting of substantially individual somatic cells in the volume of milk; or

b) assessing at least one property of at least one biological particle in the volume of milk;

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iii) storage means for storing and providing at least one result of the assessment of particles in the identified volume of milk;

iv) storage means for storing and providing at least one predetermined milk quality parameter;

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v) processing means for correlating the at least one result provided in iii) to the at least one predetermined milk quality parameter provided in iv); and

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vi) means for regulating the milking process based on the correlation obtained in step v).

108. (previously presented) A system according to claim 107, said system further comprising means for assessing at least one chemical or physical property of the milk.

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109. (previously presented) A system according to claim 108, wherein the assessment of one or more chemical properties comprises the estimation of the

concentration and/or the level of one or more of: fat, protein, lactose, citric acid, urea, haemoglobin, ketones, carbon dioxide, oxygen, pH, potassium, calcium, or sodium.

5 110. (previously presented) A system according to claim 108, wherein the assessment of one or more physical properties comprises the measurement of one or more of: temperature, conductivity, or light scatter.

111. (previously presented) A system according to claim 107, wherein the
10 assessment of individual somatic cells and/or the correlation of the counting to a value representing the number of somatic cells per volume of milk is done for one or more individual quarter(s).

112. (previously presented) A system according to claim 107, wherein the
15 regulation of the handling of the milk is done individually for milk from one or more quarter(s).

113. (previously presented) A system according to claim 107, further comprising detection means for identifying the animal and one or more
20 information concerning the time of previous milking.

114. (previously presented) A system according to claim 107, wherein the regulation of the handling of the milk is directing the milk to one or more storage means and/or outlets.

115.   (previously presented) A system according to claim 107, wherein at

least one of the result of the assessment of the volume of milk is/are transferred

to a storage means, wherein the result of identification of the animal is stored, the

5   data of the storage means being available to computing means.

116.   (currently amended) A system according to claim 107, wherein the

milking apparatus is an automatic milking system.

10   117.   (previously presented) A system according to claim 107, wherein the

assessment of particles is performed by automated microscopy performed by

creating a spatial image representation of electromagnetic irradiation from an

exposing domain containing a sample of the milk and performing a quantitated

detection of the image.

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118.   (previously presented) A system according to claim 117, wherein the

volume identified is in the range between 0.01 µl and 20 µl.

119.   (previously presented) A system according to claim 108, wherein the

20   assessment of any chemical property is based on spectrophotometric

measurement and/or wherein the assessment of any chemical property is based on

potentiometric measurement.

120.   (previously presented) A system according to claim 107, wherein the

volume of milk being assessed is a collected at different times during milking.

121.   (previously presented) A system according to claim 107, comprising a

5   disposable device comprising a sample compartment.

122.   (previously presented) A system according to claim 107, wherein the

assessment of particles is performed in a domain where at least one physical

dimension of the domain partly determines the volume of the domain, and where

10   the at least one physical dimension is substantially different during at least a part

of any period when a sample is introduced to the domain and at least a part of any

period when a measurement or detection is performed.

123.   (previously presented) A system according to claim 107, wherein the

15   assessment of particles is activated or controlled by the controlling means

controlling the milking.

124.   (previously presented) A method according to claim 80, said method

further comprising assessing one or more chemical or physical property of the

20   milk simultaneously with the assessment of the particles in the identified volume

of milk.

125.   (previously presented) A method according to claim 80, wherein the assessment of particles is the counting of biological particles present in the milk, the biological particles having diameter of more than 0.5 mm.

5   126.   (previously presented) A method according to claim 93, wherein the signal which is detected for the assessment of particle is a signal which is caused by emission of electromagnetic irradiation by photoluminescence, the photoluminescence being associated to one or more molecules which is/are a part of the particle.

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127.   (previously presented) A method according to claim 96, wherein the signal which is detected for the assessment of particle is a signal which is caused by emission of electromagnetic irradiation by photoluminescence, the photoluminescence being associated to one or more molecules which is/are a part

15   of the particle.

128.   (previously presented) A method according to claim 104, wherein at least a part of the volume of milk being assessed is acquired and/or identified before 100 ml of milk have been milked.

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129.   (previously presented) A system according to claim 108, further comprising detection means for identifying the animal and one or more information concerning the health of the animal.

130.   (previously presented) A system according to claim 114, further comprising detection means for identifying the animal and one or more information concerning the health of the animal.

5   131.   (previously presented) A method according to claim 81, wherein the assessment of particles in the milk, and/or the assessment of one or more chemical or physical property of the milk, is done before or after the identification of the individual animal being milked.

10   132.   (previously presented) A method according to claim 81, wherein at least one of the assessment of particles, chemical or physical property of milk is performed in a disposable device.

133.   (previously presented) A method according to claim 81, wherein at
15   least one of the assessment of particles, chemical or physical property of milk is performed in a domain where at least one physical dimension of the domain partly determines the volume of the domain, and where the at least one physical dimension is different during at least a part of any period when a sample is introduced to the domain and at least a part of any period when a measurement or
20   detection is performed.

134.   (previously presented) A method according to claim 81, wherein at least one of the assessment of particles, chemical or physical property of milk is activated or controlled by the controlling means controlling the milking.

135.   (previously presented) A system according to claim 109, wherein at least one of the assessment of particles, or chemical or physical property of milk is performed in a domain where at least one physical dimension of the domain partly determines the volume of the domain, and where the at least one physical dimension is different during at least a part of any period when a sample is introduced to the domain and at least a part of any period when a measurement or detection is performed.

136.   (previously presented) A system according to claim 109, wherein at least one of the assessment of particles, or chemical or physical property of milk is activated or controlled by the controlling means controlling the milking.

137.   (previously presented) A method according to claim 93, wherein the volume of the liquid sample from which electromagnetic radiation is irradiated is detected is in the range between 0.04 µl and 4 µl.

138.   (previously presented) A system according to claim 117, wherein the volume identified is in the range between 0.04 µl and 4 µl.